

**Notice of Allowability**

Application No.

10/615,786

Applicant(s)

NONAKA ET AL.

Examiner

Gevell Selby

Art Unit

2622

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 2/5/06.
2. ☒ The allowed claim(s) is/are 5 and 10-13, renumbered as claims 1-5.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All   b) ☐ Some\*   c) ☐ None   of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### DETAILED ACTION

1. Claims 5 and 10-13 are allowed.
2. The following is an examiner's statement of reasons for allowance:

In regard to claim 5, the prior art does not disclose an image pickup device with the combination of limitations specified in the claimed invention, specifically the limitations of:

wherein said image sensor includes a vertical CCD means to vertically transfer the charge read from said photodiodes and a horizontal CCD means for two lines to horizontally transfer the charge transferred by said vertical CCD means; and

wherein said driving means drives said image sensor in such a manner as to read two imaging signals having different exposure time from each of the two lines of said horizontal CCD means, as stated in claim 5.

In regard to claim 10, the prior art does not disclose an image pickup device with the combination of limitations specified in the claimed invention, specifically the limitations of:

wherein the timing of reading the stored charge on a vertical CCD from four successive vertical lines of photodiodes is controlled independently, and

wherein said digital image signals representing at least two digital images are generated in such a manner that after reading the charge on the vertical CCDs from the photodiodes to switch the charge storage time of said CCD image sensor means by said CCD image sensor driving means for each two lines of said digital image signals, an imaging signal with the charge stored in mixed pixels having the same storage time is read thereby to obtain imaging signals having different exposure time for each line, said imaging signals being separated for each line having the same exposure time thereby to

Art Unit: 2622

generate a digital image signal having individual color information and brightness information, as stated in claim 10.

In regard to claims 11-13, the prior art does not disclose an image pickup device with the combination of limitations specified in the claimed invention, specifically the limitations of:

wherein said image sensor means has the number of effective pixels in vertical direction at least twice as many as the number of effective lines of the digital image signal output from said image pick-up device, said image sensor means changing the exposure time in vertical direction;

wherein said digital signal processing means distributes the imaging signals read from said image sensor means into groups of imaging signals obtained with the same exposure time, and thus generates a digital image signal representing at least two digital images, while at the same time adding said digital image signals to each other; and

wherein said digital image signal having a wide dynamic range further has added thereto an interpolation signal newly generated by signal interpolation to correct the deviation of the coordinates of said two digital image signals on said CCD image sensor means, as stated in claim 11.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Art Unit: 2622

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gevell Selby whose telephone number is 571-272-7369. The examiner can normally be reached on 8:00 A.M. - 5:30 PM (every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on 571-272-7304. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

gvs

  
TUAN HO  
PRIMARY EXAMINER